UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,090	06/21/2002	Stephen Arkinstall	220316USOPCT	7121

22850 7590 09/30/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
CHANG, CELIA C

ART UNIT	PAPER NUMBER
1625	

NOTIFICATION DATE	DELIVERY MODE
09/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte STEPHEN ARKINSTALL, SERGE HALAZY, DENNIS CHURCH, MONTSERRAT CAMPS, THOMAS RUECKLE, JEAN PIERRE GOTTELAND, and MARCO BIAMONTE

Appeal 2008-2528
Application 10/088,090
Technology Center 1600

Decided: September 26, 2008

Before, TONI R. SCHEINER, DEMETRA J. MILLS, and LORA M. GREEN, *Administrative Patent Judges*.

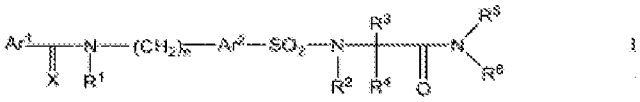
MILLS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134. The Examiner has rejected the claims for lack of written description, enablement and obviousness. We have jurisdiction under 35 U.S.C. § 6(b).

The following claim is representative.

1. A compound according to formula I



with its geometrical isomers, in an optically active form as enantiomers, diastereomers, as well as in the form of racemates, as well as pharmaceutically acceptable salts thereof, wherein

Ar^1 is unsubstituted phenyl or phenyl substituted with one or more substituents selected from the group consisting of substituted or unsubstituted C_1-C_6-alkyl, trihalomethyl, substituted or unsubstituted C_1-C_6-alkoxy, substituted or unsubstituted C_2-C_6-alkenyl, substituted or unsubstituted C_2-C_6-alkynyl, amino, acylamino, aminocarbonyl, substituted or unsubstituted C_1-C_6-alkoxycarbonyl, aryl, carboxyl, cyano, halogen, hydroxy, nitro, acyloxy, acylamino, sulfoxy, sulfonyl, and substituted or unsubstituted C_1-C_6- thioalkoxy;

Ar^2 is thienyl;
X is 0;
n is 1;
R^1, R^2, R^3 and R^4 are hydrogen;
R^5 is H or C_1-C_6-alkyl;
R^6 is selected from the group consisting of H, substituted or unsubstituted C_1-C_6-aliphatic alkyl, and substituted or unsubstituted saturated cyclic C_4-C_8-alkyl optionally containing 1-3 heteroatoms and optionally fused with an unsubstituted or substituted aryl or an heteroaryl; or R^6 is a substituted aryl, unsubstituted aryl, substituted heteroaryl, or unsubstituted heteroaryl,

wherein said aryl or heteroaryl groups may be substituted with one or more substituents selected from the group consisting of substituted or unsubstituted C_1-C_6-alkyl, trihalomethyl, substituted or unsubstituted C_1-C_6-alkoxy, substituted or unsubstituted C_2-C_6- alkenyl, substituted or unsubstituted C_1-C_6-alkynyl, amino, acylamino, aminocarbonyl, substituted or unsubstituted C_1-C_6-alkoxycarbonyl, aryl, carboxyl, cyano, halogen, hydroxy, nitro, acyloxy, acylamino, sulfoxy, sulfonyl, and C_1-C_6-thioalkoxy.

Cited References

Vermeulin et al. US 6,646,149 B1 November 11, 2003

Grounds of Rejection

1. Claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 stand rejected under 35 U.S.C. § 112, first paragraph, for new matter.

2. Claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 stand rejected under 35 U.S.C. § 112, first paragraph for lack of written description and failure to comply with the enablement requirement.

3. Claims 1 stands rejected under 35 U.S.C. § 103(a), for obviousness over Vermeulin.

DISCUSSION

Background

> The present invention is related to sulfonyl amino acid derivatives notably for use as pharmaceutically active compounds, as well as pharmaceutical formulations containing such sulfonyl amino acid derivatives. In particular, the present invention is related to sulfonyl dipeptide derivatives displaying a substantial modulatory, notably an inhibitory activity of the JNK (Jun-Kinase) function or pathways respectively, and which are therefore particularly useful in the treatment and/or prevention of disorders of the autoimmune and the neuronal system. The present invention is furthermore related to novel sulfonyl amino acid derivatives as well as methods of their preparation.

(Spec. 1.)

1. Claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 are rejected under 35 U.S.C. § 112, first paragraph, for new matter.

The Examiner contends with respect to the R^3 and R^4 substitutents in the compound of formula I, "that the instant amendment limiting the scope of the generic concept to R^3 and R^4 are both hydrogen *together with the subcombination of Markush elements as now recited in the 'currently amended' claim 1* is NEW MATTER." (Ans. 3.[1])

The Examiner argues that:

> On page 10 of the specification, an explicit description with respect to the generic support of the invention has been clearly provided that **at least one of R^3 and/or R^4 *must* be an amino acid** in combination with the generic concept of other Markush elements. Therefore, support for R^3 and R^4 as hydrogen to be combined with *the subcombination of Markush elements as now recited in the "currently amended" claim* 1 was not found.

(Ans. 3-4.) The Examiner finds that the description on page 11 of the Specification can only support the particular compound described and that that species "does not support a generic description for which the single disclosed species was explicitly excluded by the generic description." (Ans. 8.)

The Examiner further argues with respect to the R^6 substituent of the compound of formula I that:

> [A]ll the compounds of claim 9 have a R6 being alkyl substituted with a "heteroarylamino" moiety (see CA 134:266198 structural delineation and nomenclature for the compounds). The instantly amended claim 1 is drawn to R6 being substituted C_{1-6} aliphatic alkyl. Reading "substitution" of

---

[1] All references to the Answer throughout this Decision are to the Supplemental Answer dated March 7, 2007 and mailed August 14, 2007, unless otherwise stated.

this alkyl moiety in light of the specification on pages 11-12 wherein the preferred embodiment was defined for the R6 substitution (see paragraph bridging the two pages), ***none*** of the substituents are aryl or heteroaryl amino. It is noted that the substituents disclosed on page 11-12 paragraph bridging delineated semistructurally, are aryl-, heteroaryl-, NH_2aryl-, NH_2heteroaryl-, arylO-, and heteroarylO- (please note that the bonding is at the last descriptive structure). To one having ordinary skill in the chemical art, no description or imaged description based on the above recited moieties in the specification can be read into a *heteroarylamino* which must be the requirement for claim 1 to encompass the compounds of claim 9.

(Ans. 4.)

Appellants contend that:

Claim 1 finds explicit, literal support on page 11, lines 10-25 reproduced below (emphases added):

In preferred sulfonyl amino acid derivatives **according to formula I, Ar^1 is an unsubstituted or substituted phenyl**, preferably a 4-chlorophenyl group, X is preferably O, R^1, R^2, **R^3 and R^4 are preferably hydrogen**, n is 1, Ar^2 is preferably thienyl, R^5 is H or C_1-C_6-alkyl.

In said preferred embodiment, R^6 is selected from the group comprising or consisting of H, a substituted or unsubstituted C_1-C_6-aliphatic alkyl- e.g. a C_1-C_6-alkylamino aryl, a C_1-C_6-alkylamino heteroaryl, a substituted or unsubstituted cyclic C_4-C_8-alkyl containing optionally 1-3 heteroatoms and being optionally fused with an unsubstiuted or substituted aryl or heteroaryl; or R^6 is an unsubstituted or substituted aryl or heteroaryl.

The above mentioned aryl or heteroaryl groups are optionally substituted by substituted or unsubstituted C_1-C_6-alkyl, like trihalomethyl, substituted or unsubstituted C_1-C_6-alkoxy,

> substituted or unsubstituted C_2-C_6-alkenyl, substituted or unsubstituted C_2-C_6-alkynyl, amino, acylamino, aminocarbonyl, substituted or unsubstituted C_1-C_6-alkoxycarbonyl, aryl, carboxyl, cyano, halogen, hydroxyl, nitro, acyloxy, sulfoxy, sulfonyl, C_1-C_6-thioalkoxy.

(App. Br. 5.[2])

When new matter is added to the claims, the proper course of action is to reject said claims for failing to satisfy the written description requirement of §112, first paragraph. *In re Rasmussen*, 650 F.2d 1212, 1214 (CCPA 1981)("The proper basis for rejection of a claim amended to recite elements thought to be without support in the original disclosure, therefore, is § 112, first paragraph ..."). The purpose of the written description requirement is to "ensure that the scope of the right to exclude, as set forth in the claims does not overreach the scope of the inventor's contribution to the field as far as described in the patent specification." *Reiffin v. Microsoft Corp.*, 214 F.3d 1342 (Fed. Cir. 2000). To that end, to satisfy the written description requirement, the inventor "must convey with reasonable clarity to those skilled in the art that, as of the filing date sought , he or she was in possession of the invention." *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). "One shows that one is 'in possession' of the invention by describing the invention, with all its claimed limitations" [emphases in original]. *Lockwood v. American Airlines*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). We further

---

[2] All references to the Appeal Brief herein are to the Supplemental Appeal Brief dated April 17, 2006, unless otherwise stated.

point out that it is not necessary for the specification to describe the claimed invention ipsissimis verbis; all that is required is that it reasonably convey to those skilled in the art that, as of the filing date sought, the inventor was in possession of the claimed invention. *Union Oil of California v. Atlantic Richfield Co.*, 208 F.3d 989, 997 (Fed. Cir. 2000); *Vas-Cath Inc. v. Mahurkar*, 935 F.2d at 1563-64.

With respect to the R^3 and R^4 substitutents, we agree with the Examiner that the amendment to recite that both the R^3 and R^4 substitutents may each be hydrogen is new matter. In our view, the amendment of the claims overreaches the scope of the inventor's contribution to the field as far as described in the patent Specification. In particular, the description on page 11 of the Specification can only support the particular compound described. The particular described species does not support a generic claim from which the single disclosed species was explicitly excluded.

Appellants argue that "the term 'amino acid residue' as representative of R^3 and R^4 in the compound of Claim 1 is understood as being the side chain of the amino acid (i.e., the portion of the amino acid molecule that distinguishes one amino acid from another). Therefore, as is known in the art, the amino acid glycine, has hydrogen as a group that distinguishes from other amino acids, e.g., phenlalanine, and therefore provides support for hydrogen at R^3 and R^4." (Reply Br.[3] 1-2.)

We are not persuaded by Appellants' argument. Appellants do not define the term "amino acid residue" in the specification. Thus we turn to the ordinary meaning of the term as understood by one of ordinary skill in

---

[3] All references to the Reply Brief herein are to the Supplemental Reply Brief dated August 29, 2006.

the art. According to the IUPAC Gold Book[4], an amino acid residue is defined as follows.

> When two or more amino acids combine to form a peptide, the elements of water are removed, and what remains of each amino acid is called an amino-acid residue. α-Amino-acid residues are therefore structures that lack a hydrogen atom of the amino group (–NH–CHR–COOH), or the hydroxyl moiety of the carboxyl group (NH_2–CHR–CO–), or both (–NH–CHR–COO–); all units of a peptide chain are therefore amino-acid residues.

While the specification does indicate that R^3 and R^4 may be independently from one another selected from a group comprising or consisting of amino acid residues (Spec. 9), the Specification further qualifies that "at least one of R^3 and/or R^4 must be an amino acid residue." (Spec. 10.) Therefore, at least one of R^3 and/or R^4 must be an amino acid residue within the IUPAC definition outlined above, as understood by one of ordinary skill in the art. If glycine were inserted at the R^3 or R^4 position, the substituent would be (–NH_2–CH_2–COO-), and thus each independent R^3 or R^4 may not both be hydrogen according to the Specification.

In view of the above, we find that the amendment to recite that R^3 and R^4 may be hydrogen is new matter, exceeding the scope of the Specification, as filed.

With respect to the R^6 substituent, the Specification indicates that R^6 may be a "substituted or unsubstituted heteroaryl" (Spec. 10) which may further be optionally substituted with an amino group

---

[4] Goldbook.iupac.org/A00279.html

(Spec. 10). We do not read the Specification definition of "substituted" at pages 7-8, as limiting the substitution to one substitution, see particularly the Specification, page 8, ll. 1-2. Therefore, according to this definition of substituted, R^6 may be a substituted heteroarylamino group, such as an alkyl heteroarylamino group. Alternatively, according to claim 1, R^6 may be a substituted C_1-C_6 alkyl group (Spec. 10: 7-8), wherein the term "substituted or unsubstituted" is defined to include both alkyl and heteroaryl substituents, optionally substituted with primary, secondary or tertiary amino groups (Spec. 7-8). According to this definition, R^6 may be a C_1-C_6 alkyl heteroarylamino substituent.

Because we do not read the Specification's definition of "substituted" at pages 7-8, as limiting the substitution to a single substitution, we find that the R^6 aryl or heteroaryl groups may be substituted with one or more substitutents, encompassing the compounds having alkyl heteroarylamino groups of claim 9.

In view of the above, we reverse the Examiner's rejection with respect to the definition of the R^6 substitutent as being new matter.

2. Claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 are rejected under 35 U.S.C. § 112, first paragraph for lack of written description and failure to comply with the enablement requirement. (Ans. 5.)

The requirement for written description under the first paragraph of section 112 is separate and distinct from the enablement requirement of that paragraph. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, (Fed. Cir. 1991). "Although there is often significant overlap" between the

enablement and written description requirements, "they are nonetheless independent of each other." *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 921 (Fed. Cir. 2004). An "invention may be enabled even though it has not been described." *Id. See also Ex parte Kubin*, 83 USPQ2d 1410, 1416-17 (Bd. Pat. App. & Int. 2007).

Thus we treat the combined rejections of the Examiner separately.

Written Description

A. The Examiner "'bears the initial burden ... of presenting a prima facie case of unpatentability.' ... Insofar as the written description requirement is concerned, that burden is discharged by 'presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.'" *In re Alton*, 76 F.3d 1168, 1175 (Fed. Cir. 1996). "[T]he written description requirement can be met by 'show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics ... i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics.'" *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 1316, 1324 (Fed. Cir. 2002) (emphasis omitted, bracketed material original).

The Examiner argues that:

> [T]he changing of modulating to "down regulate or inhibit" lacks antecedent basis in the specification. T he argument that it is not necessary to have literal basis for the terms is erroneous. …[M]odulation encompasses both enhancement and inhibition. To change to down regulate ***without*** literal support is ***new matter*** since no descriptive support can be found that the ***in vitro*** inhibition is physiologically down regulation.

> …[P]hysiologically, inhibition of a "receptor" can be either up-regulation or down-regulation, no descriptive support can be found that such in vitro inhibition has any nexus to a physiological down-regulation as currently amended.

(Ans. 6.)

Appellant contends that the *in vitro* data presented in the specification on pages 32 and 34 shows the ability of compounds representative of the claimed invention have JNK inhibiting activity. Thus the specification establishes that the compounds of formula I inhibit JNK. (Reply Br. 7.)

We find that the Specification describes compounds which inhibit the JNK pathway. (See, Specification 1: 4-11; 12: 24 to 13:2.) Even though the Examiner finds that the limited data for two single compounds discussed in the Brief at page 13, which are "explicitly excluded by the generic description, cannot offer any descriptive . . . support for the claimed invention (Ans. 10-11)," the Examiner has not met the burden of showing that other compounds within the scope of the claims and described in the Specification would not be understood by one of ordinary skill in the art to also be inhibitors of the JNK pathway. The written description rejection is reversed.

Enablement

B. "When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is

not adequately enabled by the description of the invention provided in the specification of the application." *In re Wright*, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993).

"[T]o be enabling, the specification . . . must teach those skilled in the art how to make and use *the full scope of the claimed invention* without 'undue experimentation.'" *Wright*, 999 F.2d at 1561, (emphasis added), *quoted in Genentech, Inc. v. Novo Nordisk, A/S,* 108 F.3d 1361, 1365, (Fed. Cir. 1997). Thus, "there must be sufficient disclosure, either through illustrative examples or terminology, to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed." *In re Vaeck*, 947 F.2d 488, 496 & n. 23, (Fed. Cir. 1991), *quoted in Enzo Biochem, Inc. v. Calgene, Inc.,* 188 F.3d 1362, 1374, (Fed. Cir. 1999).

The Examiner contends that:

> The instantly amended claims do not contain compounds described in the specification, and the method of using the compounds for such an array of enormous utility in treating all autoimmune diseases and/or neuronal system is incredible . . . . No descriptive and enabling support can be found in the specification for such breadth, and the claimed scope is therefore broader than the descriptive and enabling disclosure.
>
> . . . In addition, no **nexus** can be found in the record that a single active compound can be used in treatment which varies from epilepsy, to Alzheimer's disease, to head drama [*sic*], to spinal cord injury, and all autoimmune diseases for which no descriptive support can be found. . . .

(Ans. 5.) In sum, the Examiner finds that the claim scope is broader than the descriptive and enabling disclosure. (Ans. 5.)

With respect to the compound claims (1, 7, 8, 9, 29, 39 and 41), the method of preparing the compound claims (18 and 19) and composition

claim (17), Appellants argue that the "specification unequivocally describes the compounds of formula I" and the pharmaceutical composition claims." (App. Br. 10.)

Appellants further argue that:

> Starting on page 15, line 17, the specification describes how to make the compounds of formula I. On page 16, starting at line 1 a detailed preferred method of synthesis is also described. In addition, on pages 26-30, several detailed examples of making compounds of formula I are described. Therefore, the compound claims as well as the pharmaceutical composition containing the same are clearly enabled by the specification.
>
> Furthermore, in light of the fact that the specification on pages 15 and 17 describes the process steps of making compounds of formula I, the methods for preparing the compounds as set forth in Claims 18 and 19 are clearly adequately described by the specification. Still further, in light of the fact that the Applicants have demonstrated that these processes can be used to make compounds within the definition of formula I in the Examples and the Office has not provided any evidence or rationale as to why one would expect these processes not to work, the processes claimed in Claims 18 and 19 are also enabled.

(App. Br. 11.)

We agree with Appellants that the Specification describes methods of making the claimed compounds and compositions (Spec. 16-23). We further find that the Specification discloses methods of using the claimed compounds as inhibitors of JNK. For example, the specification on pages 32 and 34 shows the ability of structurally related compounds have JNK inhibiting activity. (Reply Br. 7.) The Specification discloses the compounds of the invention are useful to inhibit the JNK pathway. (See,

Specification 1: 4-11; 12: 24 to 13:2.) "[T]he law makes clear that the specification need teach only one mode of making and using a claimed composition." *Engel Indus., Inc. v. Lockformer Co.*, 946 F.2d 1528, 1533, 20 USPQ2d 1300, 1304 (Fed. Cir. 1991); and *Johns Hopkins Univ. v. Cellpro Inc.*, 152 F.3d 1342, 1361 (Fed. Cir. 1998)); *see also Durel Corp. v. Osram Sylvania Inc.*, 256 F.3d 1298, 1308 (Fed. Cir. 2001). Therefore, we conclude that the compound, process of making the compound, and composition claims are enabled.

As to the method of use claims (30-35, 38, and 42-45), Appellants argue that:

> [T]he specification at page 13, line 24 - page 14, line 3[] describes how the compounds can be used:
> . . .the compounds pursuant to formula I are useful for the treatment or prevention of immuno- and/or neuronal-related diseases or pathological states in which inhibition of JNK1 and/or *JNK2* and/or JNK3 plays a critical role such as epilepsy; neurodegenerative diseases including Alzheimer's disease, Huntington's disease, Parkinson's disease; retinal diseases; spinal cord injury; head trauma, autoimmune diseases including multiple Sclerosis, inflammatory bowel disease (IBD), rheumatoid arthritis; asthma; septic shock; transplant rejection; cancers including breast, colorectal, pancreatic and cardiovascular diseases including stroke, cerebral ischemia, arterosclerosis, myocardial infarction, myocordial reperfusion injury.

(App. Br. 10.)

We find that the Examiner has met the initial burden of setting forth a reasonable explanation as to why she believes that the scope of protection provided by that claim is not adequately enabled by the

description of the invention provided in the Specification of the application. Again, the Examiner finds that the limited data for two single compounds discussed in the Brief at page 13 do not offer any enablement support for the claimed invention. (Ans. 10.) We agree.

The claims, particularly the method to treat a disorder of the autoimmune and/or neuronal system (claim 33) and the method of treating cancer (claim 42) and cardiovascular disease (claim 44) are extremely broad. While the Specification mentions that JNK1, JNK2 and/or JNK 3 play a critical role in conditions ranging from epilepsy to myocardial reperfusion injury (Spec. 13:24 to 14:3), the Specification fails to indicate the particular significance of these pathways to these conditions or show that inhibiting this pathway alone will adequately treat the named conditions. Further the Appellants have failed show that a representative number of compounds within the scope of the claims may be used to treat "a disorder of the autoimmune and/or neuronal system (claims 30-35. 38); ."cancer" (claims 42 and 43); or "cardiovascular disease" (claims 44 and 45).

In view of the above, the rejection of claims 30-35, 38, and 42-45, for lack of enablement is affirmed.

3. Claims 1 is rejected under 35 U.S.C. § 103(a), for obviousness over Vermeulin.

The Examiner finds that:

> Vermeulin et a1. '149 disclosed generically bispolyamines that are inhibitors of polyamine transport system. A structurally similar compound is disclosed on sheet

> 29, compound 1233 wherein the difference between the prior art compound and claim 1 is a methylene which is inserted between R3R4 carbon and the carbonyl moiety of the instant claim when R6 is substituted alkyl without limitation. The linker group being one or two carbons is taught generically at col. 15 lines 30-65. [sic., (col. 17, l. 30 to col. 19, l. 30.)] This generic teaching guided by the clear exemplification of the 1241 compound on sheet 29 renders the instant one carbon linker obvious. The instant claim is merely the picking and choosing of a more limited combination of the generically disclosed alternatives by Vermeulin et al. '149.
>
> (Ans. 6.)

We find no error with the Examiner's prima facie case of obviousness.

In making an obviousness determination over a combination of prior art references, it is important to identify a reason why persons of ordinary skill in the art would have attempted to make the claimed subject matter. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741(2007). When making such a determination, the scope of the prior art and level of ordinary skill must be considered. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Vermeulin describes both aliphatic straight chain linkers and unsaturated straight chain aliphatic linkers (col. 17, l. 30 to col. 19, l. 30.) We find that the generic teaching of a linking group having one or two carbons in Vermeulin coupled with the exemplification of two specific linking group options in compounds 1233 and 1241, provides a sufficient motivation or suggestion to one of ordinary skill in the art to select a methylene or a single carbon linking group.

Where the prior art, as here, gives reason or motivation to make the claimed invention, the burden then falls on an appellants to rebut that prima

facie case. Such rebuttal or argument can consist of any other argument or presentation of evidence that is pertinent. *In re Dillon*, 919 F.2d 688, 692-93 (Fed. Cir. 1990).

Appellants contend that:

> U.S. '149 describes bispolyamines having the general formula set forth in col. 15, lines 40-43. The U.S. '149 specification then goes on to list a laundry list of possible substituents the combinations of which appear to encompass thousands of possible compounds. The Office, citing compounds 1233 and 1241 on sheet 29 of the drawings of U.S. '149 then contends that "the instant claim is merely picking and choosing of a more limited combination of the generically disclosures alternatives by Vermeulin et al. '149. (page 5 of the Office Action). Appellants … disagree.
>
> As discussed throughout the specification of U.S. '149, the only point of the discussion therein is to make and use polyamine compounds and derivatives of polyamines to inhibit polyamine transport and/or polyamine binding proteins. See Abstract and col 1, lines 16-31; col. 6, lines 48-53 ("the present invention is directed to various polyamine analogues and derivatives"); [sic. col]. 7, lines 22-24 ("a polyamine analogue or derivative of the invention includes on that binds to a polyamine-binding site of a molecule and/or inhibits polyamine transport"); and col. 15, lines 40-43: noting the block noted on the right of the formula labeled "polyamine."
>
> The enormous possible number of combinations encompassed by U.S. '149 provides no reasonable suggestion for the compounds as claimed in Claim 1. …
>
> Second, the compounds claimed in Claim 1 and those described in U.S. '149 are fundamentally different. The compounds of U.S. '149 as described in col. 15, lines 31-34 are **polyamine derivatives that are linked together via terminal amino groups** . . . In fact, the compounds cited by the Office for alleged support for the rejection also include polyamine moieties. For ease of reference, attached as evidence and listed in Appendix II is Sheet 29 of 59, Figure 9B(6) of U.S. '149.

> In contrast, the compounds defined by formula I do not contain polyamine groups. In the formula I found in Claim 1 (reproduced below for easy reference), following the sulfamide moiety (-SO_2-N-), there is a CH_2 group (noting that R_3 and R_4 are both defined as hydrogen…

(App. Br. 15-16.)

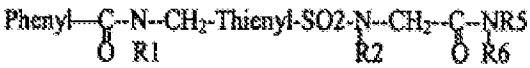
Appellants further argue that:

> The Examiner's reliance on compounds 1233 and 1241 on sheet 29 of the drawings of U.S. '149 is misplaced. The Examiner contends that the "art clearly taught the variation of a linker chain between the NR2 and the carbonyl moiety and the ordinary skill person was offered the concept of modifying 1233 with 1241 on the same page i.e. establishing a prima facie structural obvious." (page 11 of the Examiner's answer). First, the disclosure of two distinct compounds separate and apart from each other on the same page does nothing to suggest any modification.

(App. Br. 16.)

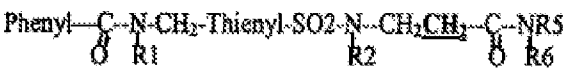
In response, the Examiner simplifies the comparison of the compounds claimed to the compounds of Vermeulin as follows (Ans. 11):

Please note that the instant claim 1 is drawn to



(when formula I of claim 1 Ar1 is substituted or unsubstituted phenyl, Ar2 is thienyl, X is O)

The exemplified compounds of '149 on sheet 29 compound 1233 is:



wherein phenyl is substituted, R1, R2, R5 are hydrogen and R6 is aminosubstiuted alkyl.

The exemplified compounds of '149 on sheet 29 compound 1241 is:

wherein phenyl is substituted, R1, R2, R5 are hydrogen and R6 is aminosubstituted alkyl.

Structural relationships have, in the past, provided the requisite motivation or suggestion to modify known compounds to obtain new compounds; see, e.g., *In re May*, 574, F.2d 1082 (CCPA 1978) (stereoisimers); *In re Wilder*, 563 F.2d 457 (CCPA 1977) (adjacent homologs and structural isomers*); In re Hoch*, 428 F.2d 1341 (CCPA 1970) (acid and ethyl ester). As set forth in *In re Deuel*, 51 F.3d 1552, 1558 (Fed. Cir. 1995): a prior art compound may suggest its homologs because homologs often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties.

In view of the above, we conclude that Appellants have failed to rebut the Examiner's prima facie case of obviousness and the rejection is affirmed.

SUMMARY

The rejection of claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 under 35 U.S.C. § 112, first paragraph, for new matter is affirmed.

The rejection of claims 1, 7, 8, 17-19, 29-35, 38, 39, and 41-45 under 35 U.S.C. § 112, first paragraph for lack of written description is reversed.

The rejection of claims 30-35, 38, and 42-45, for lack of enablement is affirmed. The rejection of claims 1, 7, 8, 9, 17-19, 29, 39 and 41 for lack of enablement is reversed.

The rejection of claim 1 under 35 U.S.C. § 103(a), for obviousness over Vermeulin is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

LP

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA VA 22314